

What are Trophic Levels?

Worksheet

A trophic level is a feeding position in a food chain. Producers (plants) are level 1; primary consumers (herbivores) level 2; secondary consumers (carnivores) level 3; and decomposers recycle all.

Questions

1. In a food chain Grass Mouse Hawk, which is trophic level 2?
A) Hawk
B) Grass
C) Mouse
D) Sun
2. Approximately what % of energy passes to the next trophic level?
A) 50%
B) 25%
C) 10%
D) 90%
3. Decomposers occupy which trophic level?
A) 1
B) 2
C) 3
D) All levels
4. Which trophic level typically has the most organisms?
A) Decomposers
B) Carnivores
C) Herbivores
D) Producers
5. Grass Rabbit Fox: identify each trophic level.
6. In a marine food chain: Algae Zooplankton Small Fish Large Fish, how much energy reaches level 4?
7. Corn Cow Human: what percentage of corn energy reaches the human?
8. Define: What is a trophic level?
9. Define: How much energy passes to the next trophic level?
10. Define: Example of a level 2 trophic organism?

Answer Key

1. C) Mouse - Level 2 are primary consumers eating the producers.
2. C) 10% - Most energy is lost as heat; only ~10% is stored in biomass.
3. D) All levels - Decomposers break down dead matter from every level.
4. D) Producers - The broad base of the energy pyramid is producers.
5. Grass = Producer (level 1) Rabbit = Primary consumer (level 2) Fox = Secondary consumer (level 3)
6. Level 1 (Algae) = 100,000 kJ Level 2 (Zooplankton) 10,000 kJ Level 3 (Small Fish) 1,000 kJ Level 4 (Large Fish) 100 kJ (~0.1% of original)
7. Corn (Level 1) = 100,000 kJ Cow (Level 2) 10,000 kJ Human (Level 3) 1,000 kJ Percentage = $1,000/100,000 = 1\%$
8. A feeding position in a food chain, from producers through consumers.
9. Approximately 10% - the rest is lost as heat and movement.
10. Herbivores like deer, rabbits, grasshoppers.

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